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			DOTE, JANIS L	ANIS L
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Please find below and/or attached an Office communication concerning this application or proceeding.

IN

			Application No.	Applicant(s)	
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Offic Action Sum		Action Comment	09/722, 828	09/722,828 NINOMIYA et al.	
		ACTION Summary	Examiner	Group Art Unit	
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Part of Paper No. 16

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- 1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' submission filed on Apr. 4, 2003 has been entered.
- 2. The examiner acknowledges the amendments to claims 13, and 15-17 filed in Paper No. 15 on Apr. 4, 2003. Claims 1-20 are pending.

Note that the office has properly entered the amended Table 6 filed in Paper No. 15 at page 39 of the specification, not at page 36 as instructed by applicants. Table 6 is not present at page 36, but at page 39.

3. As discussed in the office action mailed on Nov. 6, 2002, Paper No. 10, paragraph 5, claims 1-6 and 12 are directed to an allowable product. Thus, pursuant to the procedures set forth in the Official Gazette notice dated March 26, 1996 (1184 O.G. 86), claims 13 and 15-19, directed to the process of using the patentable product, previously withdrawn from consideration as a

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result of a restriction requirement, were rejoined and have been fully examined for patentability under 37 CFR 1.104.

However, in accordance with the Official Gazette notice, supra, process claims 14 and 20, which do not depend from or otherwise include all the limitations of the allowable product, have NOT been rejoined.

Accordingly, claims 14 and 20 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicants timely traversed the restriction requirement in Paper No. 5.

4. The objection to the specification set forth in Paper No. 10, paragraph 3, item (1) has been withdrawn in response to amended Table 6 at page 39 of the specification, filed in Paper No. 15. The amendments to Table 6 are not considered new matter for all the reasons set forth by applicants in Paper No. 15, page 5, line 20, to page 9, line 13.

The objection to the specification set forth in Paper No. 10, paragraph 3, item (2) has been withdrawn in response to the replacement paragraph filed at page 45, line 20, of the specification, filed in Paper No. 15.

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The objection to the specification set forth in Paper No. 10, paragraph 6, item (1), has been withdrawn in response to the replacement paragraphs at page 8, line 8, and page 26, line 5, of the specification, filed in Paper No. 15.

The objections to the specification set forth in Paper No. 10, paragraph 7, have been withdrawn in response to the replacement paragraphs at page 6, line 24, and page 23, line 21, of the specification, filed in Paper No. 15.

The rejections of claims 13, 16-18, and 19 under 35 U.S.C. 112, second paragraph, set forth in Paper No. 10, paragraph 9, have been withdrawn in response to the amendments to claim 13 and applicants' comments that "in claim 19, the surface layer of the heat roller and/or pressure roller comprises the releasing agent recited in instant claim 13."

5. The disclosure is objected to because of the following informalities:

The specification at page 8, lines 18-19, and page 24, line 13, discloses a pressure roller and a heat roller having a rubber hardness from "55 to 85 degrees by Asker C." The specification at page 8, line 24, and page 24, line 10, discloses a pressure roller and a heat roller having an elastic layer having a rubber hardness from "10 to 40 degrees of Asker C." The instant specification does not disclose the conditions under

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which Asker C rubber hardness values are determined, let alone any standard used to determined the hardness. As shown in the prior art, there are more than one standard and more than one load used to determine Asker C rubber hardness (standard in bold font, load underlined). See, for example, US 6,052,549 (Shimura). Shimura at col. 4, lines 32-38, defines its ASKER C hardness as that "measured by a spring type ASKER C hardness meter (manufactured by Kobunshi Keiki K.K.) according to JIS K6050. In the present invention, the hardness was measured under a load of  $500~\mathrm{g}$  directly for an unfinished charging roller . . ." (emphasis added). Similarly, US 6,035,171 (Takaya) determines a hardness of 68 degrees according to JIS K6301 with a hardness meter Asker C and a load of 1 kgf. Takaya, col. 15, lines 26-27. US 6,094,550 (Kido) discloses that the "hardness of the developer holder 3 should be preferably be 65° or under when measured with an Asker C (a rubber hardness meter of Koubunshi Keiki Col, Ltd. Conforming to Japan Rubber Association Standard SRIS 0101). This hardness is equivalent to 40° or under in the hardness conforming to JIS K6301, and equivalent to about 26° or under in the hardness conforming to ASTM D2240" (emphasis added). Kido, col. 19, line 62, to col. 20, line 2. The instant specification, in contrast to the prior art cited, does not disclose that the Asker C rubber hardness is determined by any standard.

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Asker C degree of hardness for a given sample appears to depend on the load applied and the standard used. Because the specification does not disclose the conditions under which the hardness is determined, the disclosure is inadequate to inform the ordinary worker in the art of all the information necessary to make and use the claimed invention.

In view of the evidence on the present record, because the specification does not disclose the conditions under which the Asker C rubber hardness is determined, particularly the load, nor what standard is used to determined the rubber hardness, it would require undue experimentation for a person having ordinary skill to determine the rubber hardness recited in the instant claims.

On the present record, the experimental conditions under which the Asker C rubber hardness are determined are <u>essential</u> subject matter since they are necessary to describe and enable the instant claimed subject matter. Essential subject matter <u>must</u> be disclosed in the specification as filed.

Applicants are reminded that essential subject matter <u>cannot</u> be incorporated by reference to non-patent literature, but must be fully disclosed in the specification as filed.

MPEP 608.01(p)A, 8th edition, Aug. 2001.

Appropriate correction is required.

Applicants' arguments filed in Paper No. 15 have been fully considered but they are not persuasive.

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Applicants assert that "one of ordinary skill in the relevant art would have understood the described Asker C values, what they measure, and how the measurements were taken." Applicants assert that from the disclosure in the instant specification "degrees by Asker C," the "values stated in the specification come from measurements taken directly off the Asker Model C Durometer gauge." Applicants further assert that the Asker durometer instruction manual "specifies the correct amount of force to apply (1 to 1.5 kg), tells the user to maintain uniform contact with the sample surface, and cautions the user not to use excessive force when measuring soft specimens." Applicants argue that "the dependence of hardness values on the applied load force only extends to the point that the proper force must be applied . . . applying the correct force and taking accurate hardness level measurements is well within the talent of one of ordinary skill in the art."

However, there is no evidence on the present record to support applicants' assertion that the "degrees of Asker C" disclosed in the instant specification and recited in the instant claims were determined by the Asker Model C durometer of Kobunshi Keiki Co., Ltd. The disclosure of "degrees of Asker C" does not necessarily mean that the hardness values are measured on the Asker Model C durometer, as asserted applicants. US 6,485,878 B2 (Nagase) at col. 7, lines 10-13, determines "Asker C hardness" values on a rubber sample having a thickness of 12 mm by

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employing a "Type A" durometer in accordance with JIS K6253-1997 or ISO 7619. (Although Nagase is not prior art, Nagase is relevant because it teaches pressure rollers used in fixing units comprising a covering layer having an Asker C hardness of less than 60°. Nagase, col. 7, lines 24-26.) Furthermore, as shown in the Asker durometer literature provided by applicants, all the durometer hardness tester models, e.g., A, D, E, JA, CS, or F, provide values of hardness in "degrees." Thus, the disclosure "degrees of Asker C" in the instant specification does not necessarily mean that the hardness values of the instant specification are determined by the Asker Model C durometer.

Moreover, there is no evidence on the present record to show that the Asker C hardness values disclosed in the specification and recited in the instant claims are determined under a load between 1 to 1.5 kg, as taught in the Asker durometer instruction manuel. The instant specification does not disclose any of conditions, let alone the applied load, under which the "degrees of Asker C" are determined. As discussed in the objection above, the Asker C hardness values do not necessarily have to be measured with an applied load between 1 kg to 1.5 kg. The cited prior art employs an Asker C hardness meter, such as that made by Kobunshi Keiki Co., with an applied load of 500 g.

In addition, as discussed in the objection, the value of the Asker C hardness determined by an Asker C hardness meter appears

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to depend on the standard used. The evidence discussed in the objection and above shows that there are many standards used to determine Asker C hardness values in addition to SRIS 0101 disclosed in the Asker Durometer instruction manual, e.g., JIS K6301, JIS K6050, JIS K6253-1997, ISO 7619, etc. The instant specification does not disclose how the hardness values are determined, let alone any standard used to determine the hardness. Nor does the specification disclose the instrument used to determined the hardness.

Accordingly, for the reasons discussed in the objection and above, the disclosure in the instant specification does not provide sufficient guidance to a person having ordinary skill in the art to make or use the claimed invention without undue experimentation.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 15, 18, and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Claim 15 is indefinite in the phrase "the toner image formed on the transfer material before fixing is  $0.50~\text{mg/cm}^2$ , the toner image has a glossiness . . . of from 40 to 60." It is not clear whether the toner image having the glossiness of from 40 to 60 refers to that before or after fixing.

Claims 18 and 19 are indefinite in the phrases "a rubber hardness of from 55 to 85 [claim 19: 10 to 40] degrees by Asker C" (emphasis added) because it is not clear what is the scope of said limitations. Neither the instant claims nor the instant specification define the conditions under which the recited rubber hardness by Asker C are determined. See the discussion in paragraph 5, supra.

Applicants' arguments in Paper No. 15 regarding the rejection of claims 18 and 19 have been addressed in paragraph 5, supra.

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claims 18 and 19 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described

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in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Instant claims 18 and 19 recite a rubber hardness from 55 to 85 degrees and from 10 to 40 degrees, respectively, by Asker C.

The instant specification does not disclose adequately how the Asker C hardness is determined. The specification at page 8, lines 18-19 and 24, and page 24, lines 10 and 13, merely discloses the values of Asker C hardness recited in the instant claims. The specification is silent as to the experimental conditions under which the hardness is determined. specification does not disclose that the Asker C hardness is determined according to any particular known standard. As discussed in paragraph 5, supra, the Asker C hardness appears to be dependent on the standard used and on the load applied to determine the hardness. The specification gives no guidance on what load is used. The working examples merely recite the numerical values of Asker C hardness. Nor does the specification disclose what standard should be used to determine the Asker C hardness. In addition, as discussed in paragraph 5 above, the prior art discloses more than one standard to determine Asker C hardness. Moreover, the standards do not appear to be the same. Because of (1) the infinite choices of applied loads, (2) the different standards used in determining the Asker C hardness, and

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(3) the lack of guidance from the instant specification, it would require undue experimentation for a person having ordinary skill to determine the experimental parameters needed to obtain the instant claimed numerical ranges of Asker C hardness.

Applicants' arguments in Paper No. 15 regarding the rejection of claims 18 and 19 have been addressed in paragraph 5, supra.

- 10. Claims 13 and 15-19 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.
- (1) Instant claims 13 and 15 recite "a step of fixing . . . using a fixing apparatus comprising at least one roller," wherein a surface layer of the at least one roller comprises a releasing resin, and a releasing liquid is not substantially supplied to the surface layer of the at least one roller.

The originally filed specification does not provide an adequate written description of such a fixing step as recited in the instant claims. The originally filed specification discloses a fixing step "using a heat roller and a press roller . . . "the surfaces of the heat roller and the press roller are formed of a fluorine resin, and a releasing liquid is not substantially

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supplied to the <u>surfaces</u>" (emphasis added). See the originally filed specification, page 7, lines 3-6; page 23, line 25, to page 24, line 3; and page 24, lines 7-8 and 15-16.

Originally filed claim 13 recites "a step of fixing . . . using a fixing apparatus . . . wherein a surface of the fixing apparatus having a releasing agent, and a releasing liquid is not substantially supplied to the surface thereof." Neither originally filed claim 13 nor the originally filed specification describes the fixing apparatus or fixing step recited in originally filed claim 13. The recitation of "at least one roller" in claim 13 is broader than the originally disclosed fixing step using a heat roller and a press roller, because it does not include both a heat roller or a press roller, and includes rollers that are neither a heat roller nor a press roller.

claim 13, recite that the fixing apparatus comprises a heat roller and a pressure roller. Instant claim 19, which depends from claim 13 recites that the fixing apparatus comprises a heat roller and a pressure roller, where both rollers comprises a heat roller and a pressure roller, where both rollers comprise "an elastic layer and a surface layer on a core surface in this order." Applicants in Paper No. 15, page 13, lines 20-21, states that "in claim 19, the surface layer of the heat roller . . . or pressure roller comprises the releasing resin."

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The originally filed specification does not provide an adequate written description of the fixing step using the heat roller and pressure roller recited in the instant claims. As discussed supra, the originally filed specification discloses a fixing step "using a heat roller  $\underline{and}$  a press roller . . . the surfaces of the heat roller and the press roller are formed of a fluorine resin, and a releasing liquid is not substantially supplied to the <u>surfaces</u>" (emphasis added). The heat roller and pressure roller recited in instant claims 16-19 are broader than those disclosed in the originally filed specification, because the instant claims only require that one of the rollers have a surface layer comprising a releasing resin, not both. fixing step recited in the instant claims is also broader than that disclosed in the originally filed specification, because the instant claims only require that the releasing liquid be not substantially supplied to the surface of one of the rollers, not both.

- 11. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
- 12. Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,250,382 (Shimojo) combined with US 5,079,123 (Nanya).

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Shimojo discloses a two-component developer comprising a carrier and a toner comprising a colorant and a binder resin.

The binder resin comprises a domain-matrix structure. The domain comprises a domain resin having a Mw of 12,000 and a ratio of Mw/Mn of 2.4. The matrix comprises a matrix resin having a Mw of 21,000 and a ratio of Mw/Mn of 3.1. The domain and matrix are present in a weight ratio of 50:50. See example 31 at col. 71, and binder resin 28 in Table 22 at cols. 69-70. The domain resin and matrix resin are within the molecular weight limitations of binder resins (A) and (B), respectively, recited in instant claim 8.

Shimojo does not disclose that his toner has the molecular weight-by-GPC properties of the THF-dissolved components of the toner recited in instant claim 7. However, the instant specification discloses that by using a binder resin comprising binder resins (A) and (B) having the molecular weight limitations recited in instant claim 8 at a ratio of from 2:8 to 8:2, a toner having the molecular weight properties recited in instant claim 7 "can be suitably prepared." See the instant specification, page 15, lines 22-25, and examples 5, 6, and 7. Because Shimojo's toner comprises a domain resin and a matrix resin that are within the limitations of resins (A) and (B) recited in instant claim 8, and are present in a weight ratio of 50:50, it is reasonable to presume that Shimojo's toner has the molecular

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weight requirements recited in instant claim 7. The burden is on applicants to prove otherwise. <u>In re Fitzgerald</u>, 205 USPQ 594 (CCPA 1980).

Shimojo's toner in example 31 does not comprise a wax as recited in the instant claims. However, Shimojo discloses that a wax can be added to the toner for the purpose of improving the anti-offset properties of the toner. Col. 17, lines 18-20. Shimojo further discloses that the wax preferably melts not lower than 50°, and that it can be a carnauba wax. Col. 17, lines 21-25 and 61.

Nanya discloses the advantages and disadvantages of using conventional carnauba wax. Col. 1, lines 61-65, and col. 2, lines 3-11. Nanya discloses that the disadvantages may be overcome by using, a carnauba wax "substantially free of aliphatic acids." Nanya discloses that the content of the aliphatic acids in the carnauba wax is preferably less than 1 wt%. Nanya, col. 2, lines 14-34, and 44-45. Nanya discloses that due to the substantial absence of the aliphatic acids, the size of the wax crystals decreases to 1 µm or less, when dispersed in the binder resin, which is much smaller than the crystal size of conventional carnauba wax. Nanya discloses that for this reason, a toner comprising the carnauba wax substantially free of aliphatic acids is free from filming problems and exhibits high resistance to both off-set and

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"winding phenomena." Col. 2, lines 46-57. Nanya further discloses that said toners have a lower fixing temperature and provide images with no background stain. Col. 2, lines 17-21. Nanya exemplifies the use of carnauba waxes "substantially free of aliphatic acids" having a melting point of 83°C. See example 1. The melting point of 83°C is within the range of 70 to 100°C recited instant claim 9.

Nanya does not disclose that his carnauba wax has a melt viscosity as recited in instant claim 10. However, the instant specification in Table 6 at page 39, discloses a granular purified carnauba wax having a melting point of 83°C and a melt viscosity at 110°C of 50 mPa·sec, which meets the viscosity limitation recited in claim 10. Because Nanya's carnauba wax appears to be the same as that disclosed in the instant specification, it is reasonable to conclude that Nanya's carnauba wax has a melt viscosity that meets the viscosity recited in instant claim 10. The burden is on applicants to prove otherwise. Fitzgerald, supra.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Nanya, to use Nanya's carnauba wax "substantially free of aliphatic acids" in Shimojo's toner, because that person would have had a reasonable expectation of successfully having a developer having the benefits disclosed by Nanya.

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Applicants' arguments filed in Paper No. 15 have been fully considered but they are not persuasive.

Applicants assert that Shimojo fails to disclose a toner having the molecular-by-weight GPC properties of the THF-dissolved components recited in the present invention as shown by the Rule 132 declaration (Declaration II), executed by Masanobu Ninomiya on Feb. 11, 2003, filed in Paper No. 15 (note that a copy was also filed in Paper No. 12 on Feb. 24, 2003).

However, the showing in Declaration II is insufficient to overcome the rejection because it fails to show that the molecular weight-by-GPC properties of Shimojo's toner in Shimojo's example 31, the example cited in the rejection, are outside the ranges recited in instant claim 7 for the following reasons:

(1) Declaration II does not provide any objective evidence to show that the toner in Shimojo's example 31 possesses the molecular weight-by-GPC properties outside the ranges recited in instant claim 7. Declaration II only shows that Shimojo's toner in Shimojo's example 30 (resin 27) does not possess a ratio of differential molecular weight distribution of  $5 \times 10^3$  of not larger than 0.55%, as recited in instant claim 7. Shimojo's toner has a ratio of 0.569%. (Contrary to declarant's statement that Shimojo's toner does not possess a ratio of differential molecular weight distribution of  $1 \times 10^5$  of not larger than

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0.15%, Declaration II shows that Shimojo's toner in example 30 has a ratio of differential molecular weight distribution of  $1\times10^5$  of 0.098%, which is clearly within the range of "not larger than 0.15%" recited in instant claim 7.)

(2) In Declaration II, declarant asserts that binder resin 28 (of Shimojo's example 31) "would not meet the claimed values for the ratio of differential molecular weight distribution of  $5 \times 10^3(\$)$ . In fact, based on the results above, the ratio of differential molecular weight distribution of  $5 \times 10^3(\$)$ ... would be greater than 0.569 because the toners of the binder resins of the binder resins 28 . . . of Shimojo have molecular weights that are even greater than that of Example 30. Thus, the ratio of differential molecular weight distribution of  $5 \times 10^3(\$)$  would be even greater than that obtained with Example 30 of Shimojo" (emphasis added).

However, declarant's assertion contradicts his earlier statement in the Rule 132 declaration (Declaration I) executed by declarant on Aug. 22, 2002, filed in Paper No. 8 on Sep. 9, 2002, and not disavowed. In Declaration I, declarant states that the binder resin 27 of Shimojo's example 30 has "even larger molecular weights than that of Example 31." As discussed in the rejection, Shimojo's resin 28 comprises 50 wt% of a matrix resin having a Mw of 21,000 and a Mn of 6800. As shown in Declaration II, resin 27 comprises 70 wt% of a matrix resin

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having a Mw of 21,000 and a Mn of 7000. Shimojo's resin 28 comprises about 20 wt% less of the higher molecular weight matrix resin than Shimojo's resin 27. Thus, it would appear that the toner in Shimojo's example 31 would have a molecular weight smaller than the toner in Shimojo's example 30, which was also noted by declarant in Declaration I. Accordingly, because it appears that the toner in Shimojo's example 31 has a smaller molecular weight than the toner in Shimojo's example 30, and Shimojo's example 30's ratio of 0.568 % is close to the ratio of 0.55 % recited in instant claim 7, it would appear that the toner in Shimojo's example 31 has a ratio of differential molecular weight distribution of  $5 \times 10^3$  (%) smaller than 0.569% and within the range of "not larger than 0.55%" as recited in instant claim 7.

Thus, for the reasons discussed above, Declaration II fails to show that the molecular weight-by-GPC properties of the toner in Shimojo's example 31 are outside the ranges recited in instant claim 7. Therefore, the rejection stands.

13. Claims 1-6 and 12 are allowable over the prior art of record.

Claim 11 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent

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form including all of the limitations of the base claim and any intervening claims.

The prior art of record does not teach or suggest a toner as recited in instant claim 1 for the reasons set forth in Paper No. 10, paragraph 2, which are incorporated herein by reference. Nor does the prior art teach or suggest a toner comprising inorganic particles as recited in instant claim 11.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (703) 308-3625. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (703) 308-2464. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9311 (Rightfax) for after final faxes, and (703) 872-9310 for other official faxes.

Any inquiry of papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Palestine Jenkins, whose telephone number is (703) 308-3521.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

JLD May 10, 2003 JANIS L. DOTE RIMARY EXAMINER GROUP 1500

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